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ABSTRACT

This study explored factors contributing to the educational aspirations of African American students. An underlying assumption of the study was that the paradigm for looking at aspirations as a key predictor of later attainment in college students may work differently for black students than for the general population. The study involved data collected from 26,277 college students, of whom 1,140 were black. College environment measurements included institutional structure, the peer environment, the faculty environment, and college completion rate. Study results revealed that the variables that predict educational outcomes in black and white students are very different. Additionally, black students did not appear to achieve at the levels they aspired to while often taking longer to achieve a bachelor's degree. However, black students who attended black institutions achieved higher grades in college than those who went to white institutions. In addition, attendance at institutions with high emphasis on graduate training was found to be negatively related to aspirations, unless the student became involved in research. Black females had higher aspirations than black males; the opposite was true for whites. Finally, among black students, those who had higher aspirations were more likely to enroll in graduate school. The appendices include a list of the variables entered into regression analysis. (Contains 16 references.) (GLR)

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Predicting the Educational Aspirations and Graduate Plans of Black and White College and University Students: When do Dreams Become Realities?

Paper Presented at the Association for the Study of Higher Education

1992 Annual Meeting

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ASSOCIATION FOR THE STUDY OF HIGHER EDUCATION

This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Marriott City Center, Minneapolis, Minnesota, October 29 - November 1, 1992. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Introduction

Although the past thirty years have seen great strides made in educational access for African Americans, actual degree attainment for blacks remains far behind that of whites (Farley & Allen, 1989). In 1980, approximately 17.1% of whites had completed four or more years of college whereas only 8.4% of blacks had attained at this level. By 1989 the gap had widened; 21.8% of whites compared to 11.8% of blacks had completed at least four years of college (U.S. Bureau of the Census, 1991). African Americans are even further behind in the attainment of post-baccalaureate degrees. In 1980, 84.7% of the doctorate recipients were white compared to a 4.2% representation among blacks. While the percentage rose for whites in 1989 (86.2%), blacks were even less represented in that year at 3.8%.

Recent research confirms that African Americans are far behind in actual enrollments at all levels of higher education (Farley and Allen, 1989; Astin, 1982). In fact, Astin (1982) reports that higher up in the educational pipeline, black enrollments tend to fall further and further behind. Deskins (1990) reports that between 1976 and 1984, the total enrollments in higher education institutions had increased by 6.5% for the population as a whole. However, minority enrollments had increased by 11.8%. Yet, even with these increases, black enrollments at the undergraduate level and at every level of graduate and professional education were way behind that of whites.

Studies which looked at the educational aspirations of black students have found that black students have high aspirations toward their own educational attainment. Work by Solorzano (1991; 1992) suggests that African American students actually aspire to higher educational levels than white students after controlling for factors such as socio-economic status.

Solorzano (1992) has shown that at any level of SES, African American students aspire to higher levels of education than do white students at the same class level. Yet, he also reports a large gap between the occupational aspirations of black students and the

actual attainment levels of blacks in general (Solorzano, 1991). Similarly, Astin (1990) reports that, although black students are more likely than white students to aspire to advanced degrees, they are less likely to aspire to career fields comparable to such aspirations. Thus, there is an inconsistency in the aspirations of black students and their actual attainment outcomes. Students' degree aspirations have been found to be linked to their ultimate attainment of graduate degrees (Smart & Pascarella, 1986; Astin, 1977 & 1992). Astin (1977) reports that high educational aspirations in college students can contribute to a student's chances of completing to at least the bachelors level. According to Astin, students who aspire to doctorates are more likely to persist to the Bachelor's than those who aspire to lower levels of education. If this is true, then why is it that African American students have such high educational aspirations, yet continue to show low levels of educational attainment for and beyond the bachelors degree?

Smart & Pascarella (1986) contend that schooling enhances the social mobility of those who attend. Their report suggests that students who come from lower class backgrounds are able to alter their class status by attending and completing college. One component of their model suggests that if a student from a lower class background has high aspirations and the right college experiences, the student should succeed in raising his social status beyond what his parents were able to achieve. College thereby acts as a mediator through which the social class barriers are erased. However, the impact aspirations on the actual degree attainment and social mobility appears to work differently for black students.

Several aspects of the college environment have been found to contribute to educational attainment in students. Institutional size is among those factors. Pascarella and Terenzini (1991) report that for black and white students, large institutions are negatively related to promoting educational attainment. A recent study by Astin (1992) looked at the predictors of degree aspirations after four years of college in a group of 4-year college and university students. Important predictors were high aspirations as a freshman, socio-

economic status, the level of achievement in high school, and the level of student-faculty interaction in college. Interestingly, Astin found that being African American was positively and significantly related to high degree aspirations. This finding is consistent with other research that describes the high educational aspiration of African American students. Yet, with the seemingly high aspirations of these students, one would expect equally high educational attainment. However, this does not prove to be the case. Black students are, in fact, *less* likely than white students to complete college and, as has been mentioned, even less likely to enroll in graduate school (Astin, 1977; Pascarella & Terenzini, 1991).

Other studies have found that black institutions are significant contributors to educational attainment in black students and for black women in particular (Allen, 1988; Pascarella & Terenzini, 1991; Astin & Cross, 1981). In fact, it has been found that graduates of black institutions are more likely to attend graduate school than are black graduates of white institutions (Brazziel, 1983; Matthews & Jackson, 1991). Brazziel (1983) reports that the majority of black doctorates in this country are graduates of black institutions. There are several key factors that are thought to be benefits of having attended a black institution. These benefits include the institution's ability to create better academic achievement. It has been documented that black students who attend black institutions tend to receive higher grades than those who attend white institutions (Pascarella & Terenzini, 1991). The historic contribution of black institutions on the attainment of black students underscores the importance of including them in any discussion of the graduate plans of black students.

This purpose of this study to explore the factors that may contribute to the educational aspirations of African American students. One of the assumptions underlying this work is that the paradigm for looking at the aspirations as a key predictor of later attainment in college students may work differently for black students than it does for the general population. The study is driven by three major questions:

1. Do African American students have higher educational aspirations than other students? What accounts for these differences?

2. Are there college environments that work to promote (or hinder) high aspirations in African American students?

3. Is there a difference between the variables that predict high aspirations and those that predict actual enrollment in graduate school for African American students?

Method

Students' degree aspirations were measured in 1985 (their freshman year) and then again in a follow-up four years later. Educational aspirations were compared for white students and African Americans students along with their actual plans to attend graduate school in the fall of 1989. Stepwise multiple regression was used to identify the factors associated with changes in students' educational aspirations. The analysis employed by the study is derived from Astin's I-E-O model of college impact (see Astin, 1991). This model states that in order to find the true impact of the college environment (E) on an outcome (O) one must first control for the variance in students' background characteristics or inputs (I). The analyses were blocked to control first for students' background (gender, academic achievement and involvement in high school, and occupational aspirations), then for their college environment (institutional type, institutional race, students' major, and faculty environment), and lastly students' involvement in college. An initial analysis was run predicting educational aspirations for the total sample of students. Two more sets of analyses were run. One set was performed predicting aspirations separately for white

students and for African American students. A final set of analyses was run predicting actual plans to attend graduate school for both black and white students.

Data used in this study were part of the Cooperative Institutional Research Program's national survey of college students. Students responded to a freshmen survey administered in 1985 and then to a four year follow-up in 1989. The sample included a total of 26,306 students enrolled in four year colleges or universities. Of the students in the sample, 23,277 are white and 1,140 are African American. Of the African American students in the sample, 41% attend predominantly black institutions (which further substantiates the importance of including black institutions as an independent variable in this study). These data were merged with data collected in 1989 from faculty in the same institutions, data from the Higher Education General Information Survey (HEGIS), along with data from a survey of college registrars from corresponding institutions.

Description of the Variables

The outcomes

There were two outcomes of interest in this study. The first, students' degree aspirations was measured at the time of the 4-year follow-up. Responses to the question, "What is the highest level of education you plan to attain?" were coded into a four level variable called "educational aspirations." The four levels were 1 "less than bachelors;" 2 "bachelors (including other);" 3 "master's degree;" and 4 "doctorate or professional." The second outcome variable measured students' intention to enroll in graduate school in the Fall of 1989. Students received a score of "1" on this variable if they reported no intention to enroll in graduate school in the fall of 1989 and a "2" if they did intend to enroll in graduate school in the fall. See Appendix A for a list of all the variables with short definitions where needed.

Measures of the college environment

Several measures of the college environment were included in the analysis. These measures are categorized in terms of the structural environment, the peer environment , and the faculty environment.

Institutional structure. One measure of the institutional structure is the type of institution. Institutional type was included and was broken down into four categories; public 4-year college, private 4-year college, public university, and private university. Also included was institutional race, or the predominant race of the students who attend the institution (1=white and 2=black). Measures of institutional size as defined by the total number of full-time undergraduates and the number of graduate students enrolled at the institution in 1985 was also included as a measure of institutional structure. Students' major choice in 1985 was controlled early on in the analysis in order to diminish the variance between students who enter with different major aspirations. Given that differences in major choice ultimately lead to differences in environmental experiences, it is important to control for these initial major choices in order to get the true impact of the college environment as a whole in educational aspirations for students.

The peer environment. Peer measures describe the type of students that attend a particular institution. One such measure is institutional selectivity as defined by the mean score on the SAT (math and verbal combined) of the students admitted into the institution. Other peer measures are calculated on the basis of personality and background characteristics of the entering students in our survey. A mean score on each measure is calculated creating a measure of the "average" students' score at each institution. The mean intellectual self-esteem of the institution was included as a peer measure. This was calculated based upon students' responses to a set of self-ratings on the 1985 freshmen survey. These items were factor analyzed creating several factors intellectual self-esteem being one of them. This factor is made up of seven student self-ratings and one student expectation for college. In a similar fashion, the peer factor "mean scientific orientation"

was calculated. The final peer measure was a measure of the mean socio-economic status of the students at the institution. Socio-economic status is computed by taking the sum of the student's reported family income and his mother's and father's educational level. See Appendix B for a list of the items which make up all factors.

Measures of the faculty environment. Measures of the faculty environment include the mean research orientation of the faculty, the mean diversity orientation of the faculty and the mean humanities orientation of the faculty. These measures are aggregated based on their loading on a factor analysis. Appendix C shows the items that make up faculty aggregates. Other measure of the faculty environment were the mean number of faculty that work with students on research projects, the mean number of faculty that use graduate teaching assistants, the mean response to an item measuring students faculty interaction at the institution, the mean number of faculty who perceive there to be keen competition at the institution and mean perception of the institutional emphasis on resources and reputation.

Measures of student involvement

In order to get a sense of the impact of student involvement at the institution on educational aspirations, several self-selected environments (or intermediate outcomes) were chosen. These measures included whether a student worked on an independent research project in 1988 (the year before the follow-up survey was implemented), whether a student received vocational counseling in 1988 (1988 measures were measured on a three point scale where 1 was not at all and 3 was frequently), whether or not a student worked on a professor's research project, their self-reported college grade point average, their self-reported change in interest in graduate school, and their self-reported change in their confidence in their own academic abilities (self-reported change was measured on a five point scale where 1 was much weaker and 5 was much stronger).

Measures of College completion. A potential confounding variable to this study is the fact that some students may take longer to complete the bachelors degree than others. Thus, it was important to include a block controlling for college completion. This block

was included just before the intermediate outcomes. Three measures of college completion were chosen to be included in the analysis. The most direct was a measure of whether or not the student had earned at least a bachelors' degree in 1989. Another measure of college completion was their reported plans to enroll in their current school in the Fall of 1989. The final measure of college completion is a measure of the number of years spent at the current institution.

Input variables

In order to control for students' pre-college experiences, several measures of student background characteristics were included. These variables were measured at the time of the pretest in 1985. One important background variable is the student's educational aspiration before college. Another important input variable is students' expectation that they will need extra time to complete their degree. This variable could in a sense act as a pre-test to the college completion measures, and thus, give us a better sense of how students' expectations of how much time they will need to complete the degree influences how much time they actually do take.

Other input variables included in the analysis are students' race, gender, their mother's and father's education, their mother's and father's career, their socio-economic status as measured by the sum of their income and their mother's and father's educational level, their average high school grades, their individual score on the two factors intellectual self-esteem and scientific orientation, and their self-reported reasons for going to college. A multiplicative term which measured the interaction of race and social class was included as an experimental measure. This variable was derived by multiplying the students' race (for example 2=black and 1=all other races) by the students' score on socio-economic status. This measure was included after the input block and before the environmental block.

Results

Racial differences in educational aspirations and plans for graduate school

Table 1 compares mean scores for black students and white students on selected variables. The table shows that black students start out with higher degree aspirations (mean=3.19) compared to white students (mean=2.99). Furthermore, black students have higher aspirations after four years in college compared to other students. Yet, black students don't seem to achieve at equally high levels. Black students tend to get lower college grades than do white students and they are less likely to complete the bachelor's degree in 4 years. Previous studies have suggested that black students are less likely than white students to enroll in graduate school after four years in college (see Astin, 1985). These data indicate little racial differences in students' plans to attend graduate school: Approximately 18% of white students indicated plans to attend graduate school in 1989 compared to about 16% of black students (see Table 1 for the means).

Table 1
Racial comparisons on selected variables

	Means and standard deviations for:			
	White students		Black students	
Variables	Mean	SD	Mean	SD
High school grades	6.12	1.48	5.07	1.68
1985 Degree aspirations	2.99	.81	3.19	.83
1989 Degree aspirations	3.04	.80	3.20	.82
College grades	4.27	1.01	3.56	1.03
Earned at least a Bachelor's degree	1.72	.47	1.57	.53
Plan to attend graduate school	1.18	.39	1.16	.36

Overall, students tend to shift their educational aspirations over the four years of college. Table 2 shows that in 1985 about 33.7% of the total student population aspired to the doctorate compared to 34.2% in 1989. This means there was an increase of about 0.5% in the number of students who aspired to a doctorate degree. This shift was significantly higher for those students who aspired to the masters degree: In 1985 38.5% of all students aspired to a masters degree while in 1989 the percentage was 43.2 (a change of 4.7%). African American students aspire to higher levels of education compared to white students and to the total population of students. Black students are more likely to aspire to a doctorate both in their freshmen year and four years later: 48.4% of black students aspired to the doctorate in 1985 and 46.4% in 1989. For white students, the percentages were 31.9 and 33.0 and for the total population 33.7 and 34.2. Table 2 substantiates the literature which states that African American students have high educational aspirations when compared to other racial groups.

Table 2
Changes in degree aspirations among college and university students compared by race

	Percent Among:								
	Blacks (N=868)		Whites (N=12,958)		Total Students (N=14,508)		Changes 1985-89		
1985 Aspiration	1985	1989	1985	1989	1985	1989	A	W	T
Doctorate[a]	48.4	46.4	31.9	33.0	33.7	34.2	-2.0	+1.1	+0.5
Masters	31.5	35.4	39.1	44.2	38.5	43.2	+3.9	+5.1	+4.7
Bachelors[b]	18.8	16.7	27.8	20.3	26.6	20.2	-2.1	-7.5	-6.4
Less than Bachelors[c]	1.4	1.5	1.2	2.4	1.2	2.4	+0.1	+1.2	+1.2

[a]Includes Ph.D. or EDD, MD or DDS, LLB or JD, and DB or M.Div.
[b]Includes Bachelor of Arts, Bachelor of Science, and Other
[c]Includes None, Vocational Certificate, and Associates degree

Using traditional models, one would be inclined to think that, based on their higher educational aspirations, black students would be more likely than white students to enroll in graduate school. However this proves not to be the case. Table 3 compares actual plans to attend graduate school for black and white students by 1985 degree aspirations. For both groups, those students who started out with aspirations to the doctorate were more likely to have plans to attend graduate school in 1989 than students who aspired to lower levels. However, what is interesting is that at each level of educational aspiration, white students are more likely to have plans to attend graduate school than are black students. This goes against what would be predicted by theory. The fact that black students are less likely to finish the bachelor's degree within four years probably contributes to their lower likelihood to enroll in graduate school. Perhaps African American students are taking longer to complete the degree (or not finishing at all) and thus loosing their motivation to take on further education.

Table3
Racial differences in plans to attend graduate school by 1985 degree aspiration

	Percent who plan to attend graduate school in Fall 1989 among:	
1985 Aspiration	African Americans	Whites
Doctorate[a]	28.3 (442)	32.3 (6,291)
Masters	11.7 (299)	16.6 (7,771)
Bachelors[b]	6.8 (192)	9.7 (5,647)
Less than Bachelors[c]	6.7 (15)	9.7 (248)

[a]Includes Ph.D. or EDD, MD or DDS, LLB or JD, and DB or M.Div.
[b]Includes Bachelor of Arts, Bachelor of Science, and Other
[c]Includes None, Vocational Certificate, and Associates degree

Table 4 shows specific changes in degree aspirations for African American students. The table shows where changes occur in the aspirations of black students over

the four years of college. Of the students who aspired toward a doctorate in 1985, 63.8% persisted with this aspiration after four years. Of those who did not, many (24.8%) dropped down to the master's degree and a few (10.2%) ended up aspiring to the bachelors. For the most part, those students who aspired to levels lower than the doctorate in 1985 and who changed their aspirations, ended up aspiring to the next highest level. For example, 40.5% of those who aspired to a bachelor's degree in 1985 ended up aspiring to a masters degree in 1989. Similarly, a large percentage of 1985 masters aspirants (35.2%) reported aspirations toward the doctorate. Thus, what we find is an upward trend in four year changes in degree aspirations for African American students.

Table 4
Four year changes in degree aspirations of African American students in four-year colleges and universities (N=868)

		1989 aspiration (Percent)			
1985 aspiration	N	Less than Bachelors[a] (N=12)	Bachelors[b] (N=89)	Masters (N=255)	Doctorate[c] (N=327)
Doctorate[a]	420	0.7	10.7	24.8	63.8
Masters	273	1.5	15.4	48.0	35.2
Bachelors	163	3.7	35.0	40.5	20.9
Less than Bachelors	12	0.0	8.3	50.0	41.7

[a]Includes None, Vocational Certificate, and Associates degree
[b]Includes Bachelor of Arts, Bachelor of Science, and Other
[c]Includes Ph.D. or EDD, MD or DDS, LLB or JD, and DB or M.Div.

African American students in black and white institutions

Table 5 compares black students who attended black institutions and those attending white institutions on selected variables. In 1985, students in white institutions had slightly higher degree aspirations than those in black institutions (x=3.23 and x=3.16 respectively). However, after 4 years, the scores tend to even out. By 1989 the mean level

of aspirations for black students in white institutions had dropped to 3.20 while that of blacks in black institutions had risen to 3.21. Students in black schools appear to get higher grades in college. Interestingly, students at white institutions are more likely to have finished the bachelor's degree after 4 years. Yet, the black students in black institutions are slightly *more* likely than those in white institutions to have plans for graduate school.

Table 5
Comparison of black student s in black and white institutions on selected variables

	Black students in:			
	Black institutions		White institutions	
Variables	Mean	SD	Mean	SD
High school grades	4.76	.85	5.36	1.60
1985 Degree aspirations	3.16	.84	3.23	.82
Plan to attend graduate school	1.17	.37	1.15	.36
1989 Degree aspirations	3.21	.85	3.20	.79
College grades	3.60	1.06	3.53	1.01
Earned at least a Bachelor's degree	1.55	.54	1.60	.51

Predicting 1989 degree aspirations

A regression analysis was run predicting 1989 degree aspirations for the whole population of students. Table 6 is a summary of this analysis. Not surprisingly, the highest predictor of students' 1989 degree aspirations is their 1985 degree aspirations. Students' achievement in high school was positively related to their final degree aspirations. However, these measures tended to decline in significance after controlling for the college environments. For example, high school grades started out as a relatively important predictor variable, with a beta coefficient of .07 after the input block. Yet, after controlling for degree completion the coefficient drops from .06 to a non-significant .03 and finally

finishes with a non-significant coefficient of -.01. Other important background variables include intellectual self-esteem, entering college to prepare for graduate school, mother's education, having a father who is a doctor or a lawyer, and 1985 major aspirations. Being African American is positively and significantly related to aspirations. Interestingly, being a black student from an upper class background positively affects aspirations, above and beyond the impact of being black. This interaction term is dropped from significance after controlling for completion of the bachelors degree. These findings tend to suggest that the high aspirations of black students may be a function of class. Furthermore, black students from high socio-economic backgrounds are more likely to complete the bachelor's degree within 4 years.

Students' career aspirations have an interesting effect on future degree aspirations. Aspiring to careers in business, engineering, as an artist, or as a health professional are all negatively related to a student's level of educational aspiration after 4 years of college. In addition, students who entered college primarily to make more money tended to have lower degree aspirations. Finally, students who expected that they would need extra time to complete the bachelor's degree had to have lower degree aspirations. This measure is more likely a measure of self-concept of ability, which would suggest that students with low self-concept would be likely to have low aspirations. This is not surprising.

There were four environmental measures that were related to aspirations for the total population of students. Attending a private institution is positively associated with aspirations as is attending a highly selective institution and an institution in which the faculty perceive a humanities orientation. Students who attended institutions with large graduate enrollments tended to have lower aspirations. However, this variable does not retain its significant after controlling for college involvement. This suggests that students who are highly involved in their institution (who interact with faculty and participate with research) will combat the negative impact that institutions which emphasize graduate education over undergraduate education might have on their levels of educational

aspiration. Students who were involved with doing research (either working on professor's projects or independently) tended to have high educational aspirations. Students who reported that they were more interested in graduate school after four years in college and those who reported more confidence in their own academic abilities were also more likely to report high educational aspirations after four years in college. Finally, college grades was a positive predictor of educational aspirations.

Predicting degree aspirations for black and white students

This section compares the variables that predict degree aspirations for black and white students. Table 7 shows the results of the analysis run for white students. Table 8 is the identical analysis using black students. Looking at the multiple R, both equations predict a relatively equal amount of the variance. The differences between the equations are in the types of variables that entered. For example, for white students, intellectual self-esteem is a positive predictor, whereas for black students this variables does not enter. Whereas students' 1985 career aspirations are important in the educational aspirations of white students, they are not as important for black students. For white students, having a father who is a lawyer is a positive predictor of educational aspirations. However, for black students, having a father who is an unskilled worker predicts high educational aspirations. Being female and black has an interesting impact on aspirations: Being a black woman has a positive impact on aspirations after 4 years in college. However, being a white woman has a negative impact.

For black students, the faculty perception that keen competition exists on the campus is a positive predictor of high aspirations in 1989. However, institutions with large graduate enrollments are negatively associated with aspirations for black students. For white students, private institutions, selective schools, and schools where the faculty perceive a humanities orientations are positively associated with high educational aspirations whereas full-time graduate enrollment is negatively associated. This implies that environments with an emphasis on undergraduate education (such as private liberal

arts college or black institutions) are better at encouraging such aspirations for both black and white students.

The involvement measures associated with high aspirations are related primarily to the amount of contact students have with faculty as well as their assessment of their own academic abilities during college. These variables are the same for black and white students. For both groups, students who worked on research projects with professors or independently were more likely to have high educational aspirations than those who did not. Likewise, students who received high grades in college and students who reported that they became more interested in graduate school and more confident about their academic abilities also tended to aspire to high levels of education.

Predictors of plans to attend graduate school for black and white students

The next set of analyses were run to identify the factors encourage black students to enroll in graduate school and how the model may differ for white students and black students. For this set of analyses it was important to control for completion of the bachelors degree. The results reported are based on regression analyses that included only those students who reported to having a bachelors degree or higher in 1989. Tables 9 and 10 shows the results of these analyses. First, although more variables enter the equation for white students, the equations for black students predicts more of the variance than for white (R=50 and R=45 respectively). However, it is important to acknowledge the variables that are common for both groups. Students' initial degree aspirations are an important predictor of graduate plans for both black and white students. High school grades are also important for both groups. Having a 1985 major in business is a negative predictor of graduate plans for both groups. Interestingly, aspiring to be a doctor in 1985 was a positive predictor for white students but not for black students. Once again, the occupation of the mother is an important influence on the later decisions of black students: Having a mother who is a lawyer is positively related to planning to enroll in graduate

school for black students. Black students also were more likely to enroll in graduate school if they originally enrolled in college to please their parents. A theme that does not seem to show up in predicting the plans of white students. Intellectual self-esteem is a positive predictor of graduate enrollment for both white students and black students. Finally, students career aspirations are important in predicting the plans of white students, but do not seem to be as important for black students.

There was only one institutional variable that entered for both groups. For white students, attending an institution with a strong diversity orientation is negatively associated with graduate plans after 4 years. This variable may be a proxy for large institutions. It would seem that large public universities which tend to emphasize research and graduate education do less to encourage graduate plans and high aspirations in undergraduates (white or black) than do schools more centered around undergraduate education. For black students, attending a black institution is positively related to graduate plans. This is consistent with the literature discussed earlier which credits black institutions as the major producers of future graduate degree holders (see Brazziel, 1983).

However, after controlling for college grades, attending a black institution is no longer a significant predictor for black students. This suggests that not only do black institutions give higher grades than do white institutions (as suggested by Pascarella & Terenzini, 1990) this practice contributes to high proportions of black students who enroll in graduate programs. Perhaps there is something to the speculation that grade inflation at black institutions has a positive impact on students who attend them.

Table 11 is a summary of the variables that were related to graduate plans for both black and white students. The unstandardized regression coefficient (or b) is used to compare the intensity of effect between the two groups after the final step. The table shows the dramatic differences between the two groups in the variables that are important for predicting graduate plans. This is different from the equations for degree aspirations in

which many more variables were similar. More research would be needed to gain insight into the specific reasons why such differences exist.

Table 6
Predictors of degree aspirations for all students (N=15,879)

Variables	Simple r	Beta After Input	Beta After Final
Background variables			
1985 degree aspirations	39	21	18
Intellectual self-esteem	27	09	07
Number of high school classes in foreign language	20	07	03
Entered college to prepare for graduate school	29	08	06
1945 career aspiration: Business	-14	-06	-04
1985 career aspiration: Engineering	-06	-05	*-01*
High school grades	19	07	*-01*
Mother's education	16	*01*	*02*
African American	05	03	04
Entered college to make more money	-08	-04	-02
1985 career aspiration: Lawyer	14	02	02
Entered college to become a more cultured person	12	04	*01*
Number of high school physical science courses	12	03	02
1985 career aspiration: Artist	-05	-04	-03
1985 career aspiration: Health professional	-03	-03	-02
Will need extra time to complete degree	-07	-03	*-01*
Father's career: Lawyer	07	04	02
Number of high school biological science courses	07	03	*01*
Father's career: Doctor	09	02	*02*
1985 career aspiration: Clergy	03	02	*02*
Number of high school history/government courses	07	02	*01*
Upper class African American (Interaction)	18	04	*005*
1985 major: History/Political science	13	04	02
1985 major: Social science	07	03	*01*
1985 major: Physical science	08	03	03
1985 major: English	05	03	*01*
1985 major: Other technical	-06	-02	*-01*
College environment			
Private institution	19	08	*01*
Institutional selectivity	23	05	05
Full time graduate enrollment	-02	-05	*-003*
Faculty humanities orientation	21	08	04
College completion			
Earned bachelor's degree	33	25	18
Will enroll in school in fall of 1989	-12	-07	*02*
College involvement			
Became more interested in graduate school	38	35	32
College grades	27	19	*01*
Worked on professor's research	20	12	06
Have more confidence in own academic abilities	09	10	-03
Received vocational counseling	06	03	-02
MULTIPLE R (63)			

*Measures of college completion were controlled in a block before student's college experiences.
Note: Coefficients in italics were not significant after the last step.

Table 7
Predictors of degree aspirations for white students (n=15,507)

Variables	Simple r	Beta After Input	Beta After Final
Background characteristics			
1985 degree aspirations	38	20	17
Intellectual self-esteem	27	08	05
Years of study in foreign language	21	08	03
Chose college to prepare for graduate school	29	08	06
Chose college to make more money	-08	-04	-02
High school grades	19	07	*0008*
Father's education	17	02	*02*
1985 career aspiration: Business	-14	-07	-05
1985 career aspiration: Engineer	-06	-06	*-02*
1985 career aspiration: Artist	-05	-05	-04
1985 career aspiration: Health professional	-03	-04	-03
Chose college to become a more cultured person	11	04	*01*
Years of study in physical science	12	03	*02*
1985 career aspiration: Lawyer	14	01	02
Years of study in biological science	07	03	*01*
May need extra time to complete degree	-06	-02	*-01*
Gender (female)	-02	-03	-04
1985 career aspiration: Other	-01	-04	-02
Father's career: Lawyer	07	02	*02*
Socio-economic status	18	04	*004*
1985 major: Social science	07	05	02
1985 major: History/Political science	13	05	03
1985 major: English	06	03	*02*
1985 major: Physical science	09	03	03
College environment			
Institutional control (private)	19	08	*01*
Selectivity	25	06	04
Total full-time graduate enrollment	-02	-06	*-004*
Faculty perception: Humanities orientation	22	09	04
*College completion**			
Earned a bachelor's degree in 4 years	33	25	18
Will enroll in school in 1989	-11	-07	*02*
College experiences			
Became more interested in graduate school	39	36	33
College grades	28	19	10
Worked on professor's research	19	11	06
Worked on independent research	23	13	04
More confident about own academic abilities	10	10	-03
MULTIPLE R (63)			

*Measures of college completion were controlled in a block before student's college experiences.
Note: Coefficients in italics were not significant after the last step.

Table 8
Predictors of 1989 degree aspirations for African American students N=657

Variables	Simple r	Beta After Input	Beta After Final
Background characteristics			
1985 Degree Aspiration	33	20	17
High school grades	22	17	*04*
Income	16	08	*03*
1985 Career Aspiration: Business	-18	-13	-10
May need extra time to complete degree	-11	-12	-06
Chose college to become a more cultured person	13	08	*06*
Father's career: Other	08	10	07
Father's career: Unskilled worker	04	11	09
Mother's education	16	10	10
Mother's career: Doctor	-06	-08	-09
Gender (female)	08	08	*03*
Chose college to get a better job	09	08	*05*
Mother's career: Unskilled worker	-07	*-007*	*-05*
1985 Major: Other technical	-14	-10	-07
1985 Major: Mathematics/statistics	-04	-07	*-03*
College environment			
Total full time graduate enrollment	-05	-07	*-06*
Faculty perception: Keen competition	21	05	11
College completion			
Earned a bachelor's degree in 4 years*	37	27	19
College experiences			
Became more interested in graduate school	31	27	23
College grades	33	22	14
Worked on professor's research	19	13	08
MULTIPLE R (62)			

*Measures of college completion were controlled in a block before student's college experiences. Note: Coefficients in italics were not significant after the last step.

Table 9
Predictors of plans to attend graduate school for white students (N=7,624)*

Variables	Simple r	Beta After Input	Beta After Final
Background characteristics			
1985 degree aspiration	25	08	07
1985 career aspiration: Doctor	20	13	12
Intellectual self-esteem	19	06	05
Scientific orientation	18	06	05
1985 career aspiration: Business	-15	*-02*	*00*
1985 career aspiration: Lawyer	09	07	08
High school grades	15	06	*01*
1985 career aspiration: Nurse	-07	-05	-05
Entered college to prepare for graduate school	20	05	*04*
1985 career aspiration: Research Scientist	10	05	05
1985 career aspiration: Health professional	04	04	*03*
1985 career aspiration: Clergy	04	04	04
1985 major: Business	-16	-07	-05
College environment			
Institutional diversity emphasis	-02	-04	*-03*
College experiences			
Became more interested in graduate school	27	24	24
College grades	20	16	13
Received vocational counseling	-09	-07	-08
Worked on professor's research	16	09	07
More confident about own academic abilities	01	04	-04
MULTIPLE R (45)			

*Sample size is based on the students who completed at least the bachelors degree by the time of the follow-up. Note: Coefficients in italics were not significant after the last step.

Table 10
Predictors of plans to enroll in graduate school for African American students (n=320)*

Variables	Simple r	Beta After Input	Beta After Final
Background characteristics			
1985 degree aspirations	29	20	19
High school grades	24	12	*08*
Mother's career: Lawyer	11	11	10
Intellectual self-esteem	21	16	13
1985 career aspiration: Secondary education	10	12	11
Entered college because parents wanted me to go	08	10	06
1985 major: Business	-18	-12	-10
College environment			
Black institution	11	15	*08*
College experiences			
Worked on professor's research	25	18	11
College grades	29	20	14
Worked on independent research	22	17	11
MULTIPLE R (50)			

*Sample size is based on the students who completed at least the bachelors degree by the time of the follow-up. Note: Coefficients in italics were not significant after the last step.

Table 11
Racial Differences in Positive Predictors of Plans to Attend Graduate School

	Final b	
Variables	African American	White
Background characteristics		
1985 degree aspirations	1112	0387
High school grades	0251	0031
1985 Career Aspiration: Doctor	--	1938
1985 Career aspiration: Secondary education	4645	--
1985 Career aspiration: Research scientist	--	1180
1985 Career aspiration: Lawyer	--	1373
1985 Career aspiration: Health professional	--	0771
1985 career aspiration: Clergy	--	1976
1985 career aspiration: Nurse	--	-1641
Intellectual self-esteem	0170	0059
Scientific orientation	--	0281
Mother's career: Lawyer	6140	--
Chose college to prepare for graduate school	--	0228
Chose college because of parents' wishes	0391	--
1985 major: Business	1229	-0640
1985 Career aspiration: Business	--	0008
College environment		
Institutional diversity emphasis	--	-0008
Black institution	0790	--
College experiences		
Became more interested in graduate school	0290	1103
College grades	0758	0674
Received vocational counseling	--	-0615
Worked on professor's research	1138	0715
More confident about own academic abilities	--	-0189
Worked on independent research	0651	--
Multiple R	**50**	**45**

Conclusions and Recommendations

This study has attempted to identify the factors that predict high degree aspirations and graduate plans among black and white college and university students. The results of the study showed that the variables that predict these outcomes in black and white students are very different. In addition, black students don't seem to achieve at the levels that they should given their high educational aspirations. Black students have higher aspirations than white students but they are less likely to have plans to actually enroll in graduate or professional school after four years in college. Much of this has to do with the fact that black students are less likely to persist to the bachelor's degree, and those who do are not likely to finish in four years. An important recommendation to those interested in encouraging minority students to apply to graduate and professional programs would be to first consider ways which would increase bachelor's completion among these students.

Black institutions were found to be a predictor of actual graduate plans among black students. This variable seems to be mediated through college grades. It would appear as though black students who go to black institutions (although entering with lower high school grades) end up achieving higher grades in college than those who go to white institutions. The historical contribution of black institutions to the success of its students has been well documented in the literature. This study adds to the list of outcomes these institutions are known to impact for black students. The finding that black institutions contribute to the graduate plans of black students is not surprising. What is interesting is that these institutions start out with a student population which has achieved at lower levels than their counterparts in white institutions and yet, after four years, are attaining at even higher levels than those in white institutions. What is provided by these data is proof of the importance of black institutions in the development of black students. Perhaps these schools can be looked upon as a model for those interested in providing encouragement for

minority students to persist with the bachelor's degree and think further ahead toward graduate education.

There are some variables that are of importance for both black and white students. For both groups of students, institutions with high emphasis on graduate training were negatively related to aspirations. However, students can combat these negative effects by getting involved in research. Institutions should encourage students (especially black students) to get involved in research and interact with faculty.

Gender has an interesting effect on aspirations. For white students, being female is negatively associated with aspirations. This is not surprising, given the extensive literature around gender differences in self-concept and achievement in college. However, for black students, the gender effect is completely different. For black students, being female positively predicts high aspirations. What this suggests is that gender and race actually interact when dealing with educational aspirations. Other studies have shown that black women do, in fact, achieve at higher levels than black males (Matthews & Jackson, 1991). The importance of such a finding is in its implications it has for issues of success for black males. Perhaps providing role models would provide a base for their improved self-concept about what it is they think that they can attain.

Finally, although black students tended to have higher aspirations when compared to white students, within the group of black students, those who had higher aspirations tended to be more likely to enroll in graduate school. One important fact to consider is the fact that African American students have a tendency to take longer to complete the bachelor's degree than do other students. It would be interesting to follow these students up in 6 years to get a sense of where they are at.

Limitations of the study and Implications for future research

Certainly this study was not conclusive in its results and analysis, being purely exploratory in nature. One limitation of the study is the limited information within the

database on aspects of students' environment before college. When studying African American students, it is essential that one look at family life and at the surrounding communities that students interact with every day (such as the church and the extended family). Such factors have been found in the literature to have a big impact on black students' aspirations. However, I think that the study does begin to show address what aspects of the college environment could help to promote aspirations among these students.

For example, the finding that the student peer environment does not seem to impact black students as much as the faculty environment has been corroborated in the literature. It would be important, therefore, to develop further analyses which test not only what the true impact of the peer environment is on African American students with regard to development of aspirations, but also to develop measures of exactly what is the peer environment like for African American students. Also missing from these data was the influence of black faculty on the black students in the sample. It would be interesting for future research to look into whether minority faculty act as role models and what role they actually play in helping black students see the possibility of post-baccalaureate education.

One important factor to consider when doing research about black students is the gender component. Black females have been found to have very unique experiences in college from black males and even from white females. Were this study to be replicated, it would be important to investigate gender differences across racial groups. Further research needs to be done which looks into the interaction between race and gender and how this interaction impacts different outcomes. Implications for this type of research would be many. For example, if there are differences in the experiences of women based upon the different experiences of the racial groups, there would be the need to look into whether different types of support services could be inacted which would be geared toward the unique needs of these women. Another important implication (and one which has been much on the minds of researchers and administrators alike) is in dealing with the needs of the black male. One prevalent concern is in how to attract more black males into college

and then once they have made it to college, how to keep them there. These are but a few of the many implications that such research could provide.

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Appendix A
List of variables entered into regression analysis

OUTCOMES: Highest degree planned in 1989 (same as pretest below)
Plans to attend graduate school in 1989 (1=no; 2=yes)

Student background characteristics

Highest degree planned in 1985 (1=Less than BA; 2=Bachelors; 3=Masters; 4=Doctorate)
Gender (1=Male; 2=Female)
Race (White, Black, Asian, Chicano, Puerto Rican, American Indian: 1=not marked; 2= marked)
Mother's education
Father's education
Mother's career
Father's career
Socio-economic status (Mother's education+Father's education+Income)
Average high school grades
Intellectual self-esteem
Scientific orientation
Reasons for going to college (9)
Students' 1985 career aspiration (15)
Expects will need extra time to finish degree

Environments

1985 major (16)
Mean intellectual self-esteem
Mean scientific orientation
Institutional race (1=White; 2=Black)
Institutional control (1=Public; 2=Private)
Institutional selectivity (SATV+SATM)
Institutional type (Public 4-year; Private 4-year; Public University; Private University)
Institutional size (Undergraduate FTE; Graduate FTE)
Mean faculty diversity orientation
Mean use of faculty teaching assistants
Mean perception of resource and reputation emphasis
Mean faculty research orientation

Measures of college completion

Highest degree earned in 1989
Number of years completed
Enrolling in school in Fall 1990

Involvement measures

Worked on professor's research
Worked on independent research
Received Vocation counseling
College grades
Change in confidence in academic abilities
Change in interest in graduate school

Appendix B
Items used in factors

Items used in student and peer factors

Intellectual self-esteem
Academic ability (self-rating)
Public speaking ability (self-rating)
Drive to achieve (self-rating)
Leadership ability (self-rating)
Intellectual self-confidence (self-rating)
Writing ability (self-rating)
Be elected to an academic honor society (expectation)
Mathematical ability (self-rating)

Scientific orientation
Career choice: Scientific researcher
Career choice: College teacher
Make a theoretical contribution to science (life goal)

Items used in faculty factors

Diversity orientation
Incorporated readings on women and gender issues into classes
Incorporated readings on racial and ethnic issues into classes
Performed research or writing focused on women or gender issues
Performed research or writing focused on racial or ethnic minorities

Institutional emphasis on resources and reputation
Institutional goal to:
Enhance the institution's national image
Increase or maintain institutional prestige
Raise money for the institution
Hire faculty 'stars'

Research orientation
Number of publications
Time spent conducting research
Personal commitment to research and scholarship